

## ATTACHMENT 1

### WASTE ANALYSIS PLAN

#### **1.A. WASTE TYPES**

1.A.I. The following types of hazardous waste have been identified as candidates for storage at the Facility.

##### **1.A.I.a. Spent Petroleum and Aqueous Parts Washer Solvent**

1.A.I.a.i. Chemically, the petroleum solvent primarily consists of petroleum hydrocarbon fractions with boiling points between 310°F and 400°F. The flash point of the petroleum solvents ranges from 105°F (ignitable) to 212°F. Impurities, such as light aromatic hydrocarbons and chlorinated hydrocarbons, usually constitute less than one percent of the total volume. The aqueous parts washer solvent is primarily an aqueous solution with a small amount of organic additives (alcohols).

Spent parts washer solvent consists primarily of parts washer solvent, solids, oil, and grease picked up in the various degreasing operations. Water content may range from 0 percent to as much as 50 percent. The oily bottoms may range from 2 percent to 10 percent by volume in the used solvent. The substances that comprise the used parts washer solvent are compatible and are suitable for bulking. The spent parts washer solvent is transported in accordance with the generator's hazardous waste determination pursuant to R315-5. Hazardous characteristics of the spent parts washer solvents can vary and are primarily associated with constituents introduced by the customer's processes. Chemically, the composition of the solvent fraction in the spent parts washer solvent is essentially the same as the clean solvent.

1.A.I.a.ii. Containers of spent petroleum based parts washer solvent that are returned from customers are poured into a drum washer/dumpster at the return/fill station, which is piped into the aboveground waste solvent storage tank located in the tank farm. As generated, spent petroleum based parts washer solvent may exhibit the characteristic of ignitability. Spent petroleum based parts washer solvents may also be considered characteristic waste by the toxicity characteristic leaching procedure (TCLP) and may carry the waste codes identified in Table 1-ATTACHMENT 1.

The spent aqueous parts washer solvent is transported from customers in containers and may be accumulated in the aboveground waste solvent storage tank via the return/fill station. The spent aqueous parts washer solvent may be considered characteristic waste by TCLP and may carry the waste codes referred to in Table 1-ATTACHMENT 1.

##### **1.A.I.b. Spent Immersion Cleaner**

- 1.A.I.b.i. Safety-Kleen leases units containing "immersion cleaner." This product is a petroleum-based solvent. Parts are immersed and agitated in equipment designed to minimize physical labor time. Spent immersion cleaner received by the facility from customers, is basically unchanged from its clean state, except oil, grease, and other solids may be picked up during the various degreasing operations. The spent solvent is nonflammable. It is regarded as hazardous because of the presence of various contaminants. The used immersion cleaner remains in the same container from the time it is collected from the customer until it is shipped to a Safety-Kleen recycle facility. The used immersion cleaner may exhibit toxic characteristics by TCLP and may carry the waste codes referred to in Table 1- ATTACHMENT 1.
- 1.A.I.c. **Spent Parts Washer Solvent Tank Sludge**
- 1.A.I.c.i. Tank bottom sludge settles from spent parts washer solvent in the aboveground storage tank. The sludge is the residual left in the tank and may contain soils, oil and grease, and water picked up in degreasing operations, together with solvent. Analyses have shown that the sludge is an ignitable waste and may also be considered hazardous with respect to TCLP standards. The sludge is removed from the aboveground tank periodically and shipped to a Safety-Kleen facility for reclamation.
- 1.A.I.d. **Spent Washer Solvent Bottom Sludge**
- 1.A.I.d.i. Parts Washer Solvent Bottoms Sludge is either accumulated in the wet dumpster/drum washer or brought into the service center from customers in drums. Filters from parts washers utilizing parts washer solvents may also be added. The nature of this waste is similar to the used parts washer solvent tank bottom sludge, except there may be some metal parts from the cleaning operation. It is typically an ignitable waste and often is a characteristic waste using TCLP standards. The parts washer solvent bottoms sludge in the dumpsters is cleaned out frequently. The waste is containerized and stored as a Branch-generated waste in a permitted waste storage area for later shipment to a Safety-Kleen recycle facility for reclamation or disposal.
- 1.A.I.e. **Dry Cleaning Wastes**
- 1.A.I.e.i. Solvents used in dry cleaning operations include tetrachloroethylene (perchloroethylene), mineral spirits, 1,1,1-trichloroethane and 1,1,2-Trichloro-1,2,2-trifluoroethane. Waste generated from dry cleaning operations may contain various concentrations of these solvents and are in the following forms:
- 1.A.I.e.i(A). Filter Cartridges: In addition to the filter materials of construction consisting of steel, paper, clay, and carbon, the used cartridge retains solvent, oil and grease, and undissolved elements such as lint and soil. Solvent retained in the filter cartridge generally amounts to less than 50 percent of the total cartridge weight.

1.A.I.e.i(B). Powder Residue: At some dry cleaning facilities, a mixture of powdered materials is used as the filter medium for the dry cleaning solvent, in lieu of a cartridge filter. This filter medium normally consists of diatomaceous earth and carbon. In addition to lint, soil, oil, and grease retained by this medium, between 40 and 50 percent by weight of the “powder residue” may be absorbed solvent.

1.A.I.e.i(C). Still Residue and Separator Water: After filtration at the generator, the dry cleaning solvent is distilled to remove the dissolved materials from the used solvent. The dissolved materials (still residues) are in liquid form and consist primarily of detergent, oil and grease, vinyl acetate (a sizing compound), water and 20 to 30 percent solvent. In some cases, the dry cleaner will separate the water condensate from the still residue. Water condensate removed from the processor may contain dry cleaning solvent, oil, grease and vinyl acetate.

1.A.I.e.ii. Approximately 80 percent of the dry cleaning solvent in use is perchloroethylene (F002 and a characteristic waste by TCLP), and may carry the waste codes referred to in Table 1-ATTACHMENT 1. Approximately 17 percent of the dry cleaning solvent is mineral spirits, and the remaining 3 percent is 1,1,1-trichloroethane or 1,1,2-Trichloro-1,2,2-trifluoroethane. The mineral spirits, 1,1,1-trichloroethane and 1,1,2-Trichloro-1,2,2-trifluoroethane are non-perchloroethylene based dry cleaning wastes and are typically managed as transfer wastes.

1.A.I.f. **Paint Wastes**

1.A.I.f.i. Paint wastes consist of paints, lacquer thinners, and paint/thinner contaminated materials. The waste is collected in containers at the customer's place of business and stored in Safety-Kleen's permitted metal shelter container storage area. The paint wastes are then re-manifested and periodically sent to a Safety-Kleen recycle center.

1.A.I.f.ii. Paint wastes include such constituents as acetone, isopropyl alcohol, methyl ethyl ketone, methyl isobutyl ketone, toluene, xylenes, and acetate compounds. This waste stream may also be a characteristic waste by TCLP, and may carry the waste codes referred to in Table 1-ATTACHMENT 1.

1.A.I.g. **Imaging/Photochemical Waste**

1.A.I.g.i. Imaging waste consists typically of an aqueous solution used to etch photo film during processing. This material is characteristic by TCLP for silver (D011).

**1.B. WASTE ANALYSIS PLAN**

1.B.I. Safety-Kleen provides solvent distribution, collection, and reclamation services to companies that are primarily engaged in automobile repair, industrial maintenance, dry cleaning, and imaging. When the cleaning fluids become dirty and can no longer be used effectively, Safety-Kleen picks up the dirty fluids and replaces them with clean, recycled fluids. The spent fluids are returned to the

facility where they are stored temporarily before they are transported to one of Safety-Kleen's recycle centers or other appropriate off-site facilities. In addition to solvents used in the industrial maintenance and repair industry, Safety-Kleen also collects dry cleaning, paint-related, and photochemical/imaging wastes for temporary storage at the facility. Safety-Kleen's customers typically are small quantity generators who operate businesses that generate only a few hazardous waste streams. These factors help ensure that Safety-Kleen will receive a highly predictable and homogeneous waste stream.

- 1.B.II. Spent solvents are the primary feedstocks for the generation of some of the Safety-Kleen solvent products. As a result, quality control of the spent solvents is necessary to ensure that reclamation occurs in the safest and most efficient manner possible. Safety-Kleen controls the use and management of its solvents by:
  - 1.B.II.a. Placing waste only in containers compatible with those wastes and segregating containers according to DOT and fire code requirements;
  - 1.B.II.b. Determining the customer's type of business (i.e., SIC code) and the purpose for which the machine will be used;
  - 1.B.II.c. Providing customers with information on how to use leased Safety-Kleen equipment, where applicable;
  - 1.B.II.d. Training employees to inspect wastes and determine whether they are acceptable for storage at the branch;
  - 1.B.II.e. Indicating on the service document, every time waste is collected, that the solvent has been evaluated and meets Safety-Kleen's acceptance criteria;
  - 1.B.II.f. Marking each container with the customer's name, address, and EPA I.D. number (if required). This information remains on containerized waste until it is accepted at the Branch;
  - 1.B.II.g. Keeping a record of each incoming and outgoing shipment in the operating log at the facility;
  - 1.B.II.h. Demonstrating the chemical and physical homogeneity of the wastes by sampling and analyzing a representative portion of generator waste streams on an ongoing annual basis at the national level; and
  - 1.B.II.i. Performing routine analysis of the wastes received at the reclamation or disposal facility.
- 1.B.III. The materials collected by the facility are often collected from a company with a single waste generation process. The composition and quality of these materials are known and Safety-Kleen's operating experience has shown that the collected materials rarely deviate from company specifications. As an additional safeguard,

Safety-Kleen personnel are instructed to inspect certain materials before returning them to the facility. This mode of operation has been proven to safeguard the recycling process and maintain a quality product.

- 1.B.IV. Safety-Kleen shall not accept any suspected nonconforming material until a full analysis has been done, otherwise the material shall be rejected. Procedures to verify waste characteristics shall occur at several checkpoints in the management of the waste.
- 1.B.V. Safety-Kleen shall require each customer to sign a service document containing the following information:
  - 1.B.V.a. The name, address, and EPA I.D. number of the facility to which the waste is being shipped;
  - 1.B.V.b. The customer's name, address, and EPA I.D. number (if required); and
  - 1.B.V.c. The description and amount of waste generated.
- 1.B.VI. Each incoming and outgoing shipment shall be recorded in the facility's operating log. In addition, each sales representative shall review the acceptance criteria each time a waste is picked up. In accordance with Safety-Kleen procedure, all generators shall sign a statement with each shipment that indicating that no material has been added to the closed-loop products supplied by Safety-Kleen. Finally, selected environmental reviews may be utilized to guard against the addition of other wastes into the generator's waste.

**1.C. QUALITATIVE WASTE ANALYSES**

- 1.C.I. Prior to acceptance, a Safety-Kleen representative shall visually inspect each container of waste at the customer's location. This inspection shall include an evaluation of the waste volume, appearance, and consistency. Safety-Kleen personnel are familiar with the characteristics of all wastes managed at the Branch. Safety-Kleen has established specific acceptance criteria for wastes managed at their facilities based on known characteristics. These criteria, described in Condition 1.D. below, shall be used by Safety-Kleen personnel to aid in their visual inspections. These acceptance criteria enable Safety-Kleen to help ensure that the wastes being collected are acceptable and do not contain unacceptable contaminants.
- 1.C.II. If a particular container of waste does not meet the established acceptance criteria, the Safety-Kleen service representative shall reject the container at the customer's place of business. At the customer's request, a sample may be collected and analyzed by Safety-Kleen to determine whether the Branch can manage it. Depending on the source, the waste shall be analyzed for parameters related to the suspected source/type of waste as identified in Table 2-ATTACHMENT 1. Alternately, the customer may choose to dispose of the material by using another (non-Safety-Kleen) facility.

1.C.III. If a waste is to be sampled for further analysis, the service representative shall take a sample of the waste and then seal the original container and label it as hazardous waste. The original container shall be left with the customer pending the results of the laboratory tests. The laboratory testing shall involve analyzing the suspect waste for compounds/characteristics related to the suspected source of the contamination (e.g., volatile organics, halogenated organics, PCBs, etc.).

1.C.IV. If the laboratory analysis reveals that the sampled waste is not contaminated and is otherwise acceptable for management at the facility, Safety-Kleen will accept the waste from the customer. If the laboratory confirms that the waste is contaminated, the customer will be given a choice as to whether they will dispose of the waste themselves or will require Safety-Kleen's assistance.

**1.D. WASTE-SPECIFIC CRITERIA**

**1.D.I. Spent Parts Washer Solvent**

1.D.I.a. Volume and color are the primary criteria for determining, by visual inspection, whether spent parts washer solvent has been contaminated. Safety-Kleen places clean parts washer solvent in various sized containers, each having a known volume based upon the service provided to the customer. When the waste is picked up, the container should not hold more than the volume originally delivered. If the volume of waste in a given container exceeds the specified level, the Safety-Kleen service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

1.D.I.b. Spent parts washer solvent shall be visually inspected for color. Clean parts washer solvent has a known color, typically a green tint or clear. Unused aqueous parts cleaner is also clear. As the solvent is used, it changes color. The specific color change is dependent upon the type of equipment being cleaned. For example, solvent used at automotive shops typically changes to brown or black, while solvent used by silk screeners will change according to the color of the inks (red, blue, pink, green, etc.). Aqueous solvent used at transmission shops changes from a clear to a red color. If the spent solvent color does not appear to be consistent with cleaning process being used, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

**1.D.II. Immersion Cleaner**

1.D.II.a. The criteria for the inspection of spent immersion cleaner are volume and color. Clean immersion cleaner is delivered to the customer in containers, with each container holding a known volume of immersion cleaner, typically six gallons. Spent immersion cleaner is picked up from the customer in the same containers. If no additional material has been added to the spent immersion cleaner, the containers should contain no more the original volume of immersion cleaner. If a container contains more than the original volume, the service representative shall

reject the container of waste in accordance with Condition 1.C.II of this attachment.

- 1.D.II.b. Clean immersion cleaner is amber in color. As the solvent is used, it turns brown in color. The more it is used, the darker brown it becomes, until it is almost black. If the spent immersion cleaner does not appear to be amber, brown, or black, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

- 1.D.III. **Spent Dry Cleaning Filter Cartridges**

- 1.D.III.a. Spent filter cartridges shall be placed in containers that hold one to three cartridges. Trained service representatives visually inspect and confirm that the items in the containers are spent dry cleaning filter cartridges. The containers may also contain approximately one to two inches of liquid that should be either clear or have a light brownish tint. If the amount of the liquid is greater than approximately two inches or if the liquid is a color other than clear to light brown, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

- 1.D.IV. **Dry Cleaning Powder Residue**

- 1.D.IV.a. The criteria for the acceptance of dry cleaning powder residue are consistency and color. A container of powder residue should not contain more than one inch of liquid. The waste should be slightly wet, with the consistency of a paste. If there is too much liquid in the container, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.
  - 1.D.IV.b. The powder residue shall be inspected for a white to grayish-black color. If the residue is not white to grayish-black in color, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

- 1.D.V. **Dry Cleaning Still Residues**

- 1.D.V.a. The criteria for the acceptance of dry cleaning still residues are consistency and color. The waste should have a highly viscous, tar-like consistency. If the consistency of the waste is non-viscous/too thin, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.
  - 1.D.V.b. In addition to the consistency, the still residue waste shall be inspected for a dark brown or black color. If the waste is not dark brown or black, the service representative shall reject the container of waste in accordance with Condition 1.C.II of this attachment.

- 1.D.VI. **Gun Cleaner Paint Waste**

- 1.D.VI.a. The significant criterion for determining whether gun cleaner paint waste is accepted is volume. The solvent is provided to customers in two containers with a set volume based upon the service type. The paint gun-cleaning machine operates as a closed system consisting of container of fresh lacquer thinner and a container for spent lacquer thinner. The closed system is designed such that there should never be a combined volume of more than the set volume of lacquer thinner in the two containers. At the time of customer waste pickup, if there is more waste in the two containers than the original volume of lacquer thinner provided to the customer, the service representative shall reject the waste in accordance with Condition 1.C.II of this attachment.

1.D.VII. **Paint Waste**

- 1.D.VII.a. The criterion for the inspection of paint waste is consistency. The waste should contain no more than 30 percent solids. The service representative shall insert a three-foot-long glass tube into the container. The tube should glide easily down to the bottom of the container. If there is resistance to the insertion of the glass tube, it is assumed that the level of solids is in excess of 30 percent and the service representative shall reject the waste. The contents of the glass tube shall also be visually examined for consistency and water content. The material should be a “free flowing” liquid, but should not contain a significant amount of water. If there is more than approximately 10 inches of water in the three-foot tube (the water and paint will separate in the tube and thus can be measured), the waste shall be rejected in accordance with Condition 1.C.II of this attachment.

1.D.VIII. **Imaging Waste**

- 1.D.VIII.a. When a customer is initially signed up for Safety-Kleen’s imaging service, their waste is analyzed for silver content using a Colorimeter or other device to measure silver content. A visual examination is made of the photo solution each time the waste is picked up. The imaging waste typically has a light to dark amber color and an aqueous consistency. At the time of pickup, if the safety-Kleen representative observes that the waste is not a light to dark amber in color and aqueous in consistency, the waste shall be rejected in accordance with Condition 1.C.II of this attachment.

1.E. **WASTE ANALYSES AT THE RECYCLE FACILITY**

- 1.E.I. Wastes shipped from the facility to a Safety-Kleen recycle facility are sampled and analyzed upon receipt in accordance with the waste analysis plan for the recycle facility. Analyses performed at the Safety-Kleen recycle facilities are undertaken to safeguard the recycling process and to assure product quality. Samples of bulk loads and composites of drum loads are analyzed for waste specific parameters including flash point, TCLP (except herbicides and pesticides), and volatile organics. Results of analyses performed at the Safety-Kleen recycle center or other laboratory of waste shipments from the facility shall be obtained by Permittee within 30 days of receipt of the waste at the recycle center and shall be maintained in the facility operating record.



**1.F.                    WASTE PROFILING**

- 1.F.I.                The Permittee shall establish a profile for each waste stream prior to initial acceptance of the waste stream from a generator. The waste profile includes the information necessary to properly manage the waste stream and establishes a baseline of information for use in determining acceptability of subsequent shipments of the waste stream.
- 1.F.II.              The Permittee shall use analytical testing, generator waste characterization information, and process knowledge to establish each waste profile. At a minimum, the Permittee shall conduct the analyses or obtain analytical results for the tests identified in Table 2-ATTACHMENT 1 to establish each waste profile. The information used to establish each waste profile shall be maintained in the facility operating record.
- 1.F.III.             At the time of waste pickup, each generator shall certify in writing that the waste being collected matches the established profile.

**1.G.                    REQUIRED RECORDS AND REPORTING**

- 1.G.I.                Waste Manifests
- 1.G.I.a.             Appropriate shipping papers/manifests are used, based on the monthly quantity of hazardous waste generated by the customer. Safety-Kleen services all three categories of generators in Utah — conditionally exempt small quantity generators (CESQGs), small quantity generators (SQGs), and large quantity generators (LQGs). CESQGs' spent solvent is removed via a service document and no manifest or Land Disposal Restrictions (LDR) form/notification is required. Appropriate records are kept at the Branch as to the date of waste pick-up, quantity, and other data on the service document. SQGs' spent solvent may be shipped under a tolling agreement, i.e., a contractual agreement between the SQG and a recycler where the recycler reclaims the waste and returns regenerated product to the SQG, in which case a manifest is not required provided the requirements of R315-5-2.20(e) are met. An LDR form/notification shall be completed per the requirements of R315-13-1 for each SQG. LQGs' spent solvent shall be manifested (if hazardous) and an LDR form/notification completed per the requirements of R315-13-1.
- 1.G.I.b.             Spent solvent (from each Safety-Kleen customer, regardless of generator status) shall be brought back to the Branch and dumped in the return/fill station and pumped to the waste solvent tank. This tank contains the spent solvent of many customers and is hazardous waste. The contents are regularly sent via truck tanker to a Safety-Kleen recycle center. These loads shall be manifested. An LDR form/notification shall be completed per the requirements of R315-13-1.

- 1.G.I.c. Shipments of parts washer solvent bottoms sludge shall also be manifested as indicated above. Required records shall be kept at the Branch and the recycle center for five years.

**1.H. LAND DISPOSAL RESTRICTION REQUIREMENTS**

- 1.H.I. Safety-Kleen Pioneer Road shall comply with the applicable land disposal restriction requirements in R315-13. Incoming loads lacking the proper LDR notification shall not be accepted. Outbound shipments shall include the proper LDR notification.

**TABLE 1-ATTACHMENT 1**

**PERMITTED WASTES**

**SAFETY-KLEEN CORPORATION**

**SALT LAKE CITY, UTAH**

Waste Type	Process Code(s)	Estimated Annual Amounts (thousands of gallons)	Potential Waste Codes
Spent Parts Washer Solvent <sup>1,2</sup>	S01 S02	336 336	D001 and D-Codes Listed in Note Below
Spent Aqueous Parts Washer Solvent <sup>1,2</sup>	S01 S02	Included Above	D-Codes Listed in Note Below
Spent Parts Washer Bottom Sludge <sup>1</sup>	S01	Included Above	D001 and D-Codes Listed in Note Below
Spent Parts Washer Bottom Sludge from Tank <sup>2</sup>	S02	Included Above	D001 and D-Codes Listed in Note Below
Spent Immersion Cleaner <sup>1</sup>	S01	14	D-Codes Listed in Note Below
Dry Cleaning Waste <sup>1</sup>	S01	97	D001, F002 and D-Codes Listed in Note Below
Paint Waste <sup>1</sup>	S01	19	D001, F003, F005 and D-Codes Listed in Note Below
Imaging/Photochemical Waste <sup>1</sup>	S01	20	D011

**NOTES:**

D-Codes: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D038, D039, D040, D041, D042, D043

<sup>1</sup> This waste may be stored in containers at the facility.

<sup>2</sup> This waste may be stored in the hazardous waste storage tank at the facility.

**TABLE 2-ATTACHMENT 1**  
**Waste Specific Analytical Requirements**  
**Safety-Kleen Corporation**  
**Salt Lake City Service Center<sup>1</sup>**

<u>Waste Stream</u>	<u>Tests</u>	<u>Methods (SW-846)<sup>2</sup></u>
1. Spent Parts Washer Solvent Sample collected from tank or container <sup>3</sup>	Flash Point TCLP (organics and inorganics <sup>4</sup> ) Appearance and Specific Gravity <sup>5</sup>	1010 1311
2. Spent Parts Washer Tank Bottom Sample collected from tank	Flash Point TCLP (organics and inorganics) Appearance	1010 1311
3. Spent Parts Washer Dumpster Sludge Random Grab Sample	Flash Point TCLP (organics and inorganics) Appearance	1010 1311
4. Spent Immersion Cleaner Random Grab Sample	Flash Point TCLP (organics and inorganics) Appearance and Specific Gravity	1010 1311
5. Dry Cleaning (Filter Cartridges, Powder Residue, and Still Bottoms)	Flash Point TCLP (organics and inorganics) Appearance Volatile Organics (F-Wastes)	1010 1311 8260
6. Paint Waste Random Grab Sample	Flash Point TCLP (organics and inorganics) Appearance Volatile Organics (F-Wastes)	1010 1311 8260
7. Paint Spray Gun Cleaner Random Grab Sample	Flash Point TCLP (organics and inorganics) Appearance Volatile Organics (F-Wastes)	1010 1311 8260
8. Imaging/Photochemicals Random Grab Sample	TCLP (organics and inorganics) Appearance	1311

Notes:

1 - All certifiable tests conducted by Utah Certified Laboratory

2 - Method Detection Limits must comply with SW-846 standards

3 - Sampling criteria applicable to Service Center quantitative analysis

4 - TCLP organics = volatile and semi-volatile constituents

5 - Appearance and Specific Gravity may also be performed by qualified Safety-Kleen Service Center representatives